

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed March 24, 2005. Reconsideration and allowance of the application and pending claims 1-13 are respectfully requested.

I. Correction to Terminal Disclaimer Filed in Last Response

In the response filed by Applicants on November 1, 2004, a terminal disclaimer was filed which erroneously, and without deceptive intent, indicated that the undersigned David Rodack was attorney of record. Accordingly, enclosed with this response is a properly executed terminal disclaimer to obviate a double patenting rejection over prior U.S. Patent No. 6,721,503.

II. Allowable Subject Matter

Applicants appreciate the Examiner's indication that claims 5 and 10 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. In that it is believed that every rejection has been overcome, or rendered moot, it is submitted that each of the claims that remains is presently in condition for allowance.

III. Double Patenting Rejections - Obviousness-type Double Patenting

Claims 1-13 have been rejected under the doctrine of obviousness-type double patenting as being unpatentable in view of claims 1-31 of U.S. Patent No. 6,603,584 ("584 patent").

Although Applicants do not concur that claims 1-13 are unpatentable in view of claims 1-31 of the '584 patent, Applicants, in the interest of expediting issuance of a patent, have submitted herewith a terminal disclaimer that disclaims any portion of term for a patent issuing from the present application that will extend beyond the term of the '584 patent. Applicants therefore respectfully request that the rejection be withdrawn.

IV. Claim Rejections - 35 U.S.C. § 102(e)

A. Statement of the Rejection

Claims 1-4, 6-9 and 11-13 have been rejected under 35 U.S.C. § 102(e) as being anticipated by *Tsuji et al.* ("*Tsuji*," U.S. Pat. No. 5,664,035). Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(e). In the present case, not every feature of the claimed invention is represented in the *Tsuji* reference.

Independent Claim 1

Claim 1 recites as follows (emphasis added):

6. A bi-directional optical link, comprising:
a *thin film detector* having an upper surface facing a predetermined direction to receive incident light; and

a *thin film emitter stacked over the upper surface* and oriented to direct a beam of light toward the predetermined direction.

Applicants respectfully submit that *Tsuji* does not disclose, teach, or suggest the emphasized claim features. Initially, Applicants respectfully submit that the compound semiconductor thin film is pertaining to the light receiver 221 of an integrated O-E and E-O converter in *Tsuji*, not a “thin film *emitter*” or “thin film *detector*,” as recited in independent claim 1. Relevant portions of *Tsuji* cited in the Office Action (col. 5, lines 50-62) as well as additional lines 63-64 of column 5 make this assertion clear, as shown in the following excerpt:

Light receiver 221 of integrated O-E and E-O converter 22 may include, for example, a compound semiconductor thin film containing gallium arsenide (GaAs), silicon (Si), etc. It is preferable to use gallium arsenide thin film which exhibits a higher rate of energy conversion at thinner film thicknesses than silicon. (See, T. Imai, "Compound Semiconductor Device", Kogyo Chosakai Publishing Co. Ltd., 1985, pp 314-315.)

Semiconductor compounds of the III-V group including gallium arsenide are preferably used for light sources. Silicon is preferably used for light receivers and light receiver arrays. This combination imposes difficulties in forming a light source, a light receiver and a light receiver array on one substrate.

As shown, it is a receiver 221 that has a semiconductor thin film, which is contrary to the claimed features.

Additionally, *Tsuji* does not disclose, teach, or suggest a *thin film emitter* or *thin film detector*, as recited in independent claim 1. Applicants have enclosed a 37 C.F.R. §1.132 declaration (see Exhibit A, herein referred to as “declaration”), herein incorporated by reference into this response, to provide evidence of what one skilled in

the art would consider to be a thin film device. As explained in the declaration, the Office Action appears to equate the thin film of a semiconductor compound to thin film device (*i.e.*, emitter and detector). Applicants respectfully submit, as described in the declaration, that one skilled in the art of thin film technology would understand that the “thin film” described in *Tsuji* refers to a thin film of material of a compound semiconductor that may comprise a substrate, as suggested in line 64 of col. 5 in *Tsuji*, or a portion of a device. Applicants respectfully submit, as described in the declaration, that one skilled in the art of thin film technology would understand that thin film technology generally includes devices having a thickness ranging typically between 0.1 and 10 microns thick, and in some circumstances, up to 30 to 50 microns thick, which is quite distinct from semiconductor compound structures, which generally have a total thickness of approximately 350 microns. Thus, as detailed in the declaration and based on the foregoing, Applicants respectfully submit that one skilled in the art of thin film technology would understand that the thin film in *Tsuji* is not the same as the thin film emitter and thin film detector as described in independent claim 1.

Further, Applicants respectfully submit that *Tsuji* does not disclose, teach, or suggest that the “thin film emitter” is “stacked over the upper surface,” as recited in independent claim 1. As is clearly shown in Fig. 1 of *Tsuji*, and assuming for the sake of argument that the receiver can be equated to a detector, there appears to exist a separation between the light source 222 and the receiver 221. This is not the same as being “stacked over the upper surface.”

Thus, Applicants respectfully submit that since *Tsuji* does not disclose, teach, or suggest the emphasized claim features, the rejection to independent claim 1 should be withdrawn.

Because independent claim 1 is allowable over *Tsuji*, dependent claims 2-5 are allowable as a matter of law for at least the reason that the dependent claims 2-5 contain all elements of their respective base claim. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Independent Claim 6

Claim 6 recites as follows (emphasis added):

6. A method establishing a bi-directional communications link, comprising the steps of:
 - positioning a ***thin film detector*** having an upper surface so as to face a predetermined direction to receive incident light;
 - stacking a thin film emitter*** over the upper surface; and
 - orienting the thin film emitter to direct a beam of light toward the predetermined direction.

Applicants respectfully submit that *Tsuji* does not disclose, teach, or suggest the emphasized claim features. Initially, Applicants respectfully submit that the compound semiconductor thin film is pertaining to the light receiver 221 of an integrated O-E and E-O converter in *Tsuji*, not a “thin film ***emitter***” or “thin film ***detector***,” as recited in independent claim 6. Relevant portions of *Tsuji* cited in the Office Action (col. 5, lines 50-62) as well as additional lines 63-64 of column 5 make this assertion clear, as explained above in association with independent claim 1. That is, *Tsuji* shows that it is a receiver 221 that has a semiconductor thin film, which is contrary to the claimed features.

Additionally, *Tsuji* does not disclose, teach, or suggest a *thin film* emitter or *thin film* detector, as recited in independent claim 6. Applicants have enclosed a 37 C.F.R. §1.132 declaration (see Exhibit A, herein referred to as “declaration”), herein incorporated by reference into this response, to provide evidence of what one skilled in the art would consider to be a thin film device. As explained in the declaration, the Office Action appears to equate the thin film of a semiconductor compound to thin film device (*i.e.*, emitter and detector). Applicants respectfully submit, as described in the declaration, that one skilled in the art of thin film technology would understand that the “thin film” described in *Tsuji* refers to a thin film of material of a compound semiconductor that may comprise a substrate, as suggested in line 64 of col. 5 in *Tsuji*, , or a portion of a device. Applicants respectfully submit, as described in the declaration, that one skilled in the art of thin film technology would understand that thin film technology generally includes devices having a thickness ranging typically between 0.1 and 10 microns thick, and in some circumstances, up to 30 to 50 microns thick, which is quite distinct from semiconductor compounds structures, which generally have a total thickness of approximately 350 microns. Thus, as detailed in the declaration and based on the foregoing, Applicants respectfully submit that one skilled in the art of thin film technology would understand that the thin film in *Tsuji* is not the same as the thin film emitter and thin film detector as described in independent claim 6.

Further, Applicants respectfully submit that *Tsuji* does not disclose, teach, or suggest that the “*stacking* a thin film emitter over the upper surface,” as recited in independent claim 6. As is clearly shown in Fig. 1 of *Tsuji*, and assuming for the sake of

argument that the receiver can be equated to a detector, there appears to exist a separation between the light source 222 and the receiver 221. This is not “stacking.”

Thus, Applicants respectfully submit that since *Tsuji* does not disclose, teach, or suggest the emphasized claim features, the rejection to independent claim 6 should be withdrawn.

Because independent claim 6 is allowable over *Tsuji*, dependent claims 7-13 are allowable as a matter of law.

Due to the shortcomings of the *Tsuji* reference described in the foregoing, Applicants respectfully assert that *Tsuji* does not anticipate Applicants’ claims. Therefore, Applicants respectfully request that the rejection of these claims be withdrawn.

V. Claim Rejections - 35 U.S.C. § 103(a)

A. Rejection of Claims 1-4, 6-9 and 11-13

Claims 1-4, 6-9 and 11-13 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Krause* (“*Krause*,” U.S. Pat. No. 5,448,077) in view of *Tsuji*. Applicants respectfully traverse this rejection.

B. Discussion of the Rejection

As has been acknowledged by the Court of Appeals for the Federal Circuit, the U.S. Patent and Trademark Office (“USPTO”) has the burden under section 103 to establish a proper case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir.

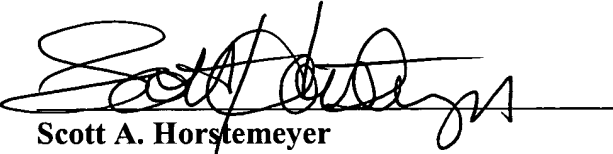
1988). Accordingly, to make a proper case for obviousness, there must be a prior art teaching or established knowledge that would suggest to a person having ordinary skill in the pertinent art to fill the voids apparent in the applied reference. It is respectfully asserted that no such case has been made in the outstanding Office Action.

As explained above, Applicants respectfully submit that *Tsuji* does not disclose, teach, or suggest at least the above-emphasized features of independent claims 1 and 6. Dependent claims 2-5 and 7-13 contain all elements of their respective base claim. Since *Tsuji* does not disclose, teach, or suggest at least the above-emphasized features, and *Krause* does not remedy these deficiencies, Applicants respectfully submit that claims 1-4, 6-9, and 11-13 are patentable over the combination of *Tsuji* and *Krause* and further request the rejection be withdrawn.

CONCLUSION

Applicant respectfully submits that Applicants' pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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